CC DOCKET NO. 98-166

COMMENTS OF DR. WILLIAM E. AVERA, CFA

FILED ON BEHALF OF THE UNITED STATES TELEPHONE ASSOCIATION, NATIONAL TELEPHONE COOPERATIVE ASSOCIATION, NATIONAL RURAL TELECOM ASSOCIATION, ORGANIZATION FOR THE PROMOTION AND ADVANCEMENT OF SMALL TELECOMMUNICATIONS COMPANIES, INDEPENDENT TELEPHONE AND TELECOMMUNICATIONS ALLIANCE, AND NATIONAL EXCHANGE CARRIER ASSOCIATION

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Q. Please state your name and business address.

A. My name is William E. Avera. My address is 3907 Red River, Austin, Texas. I previously filed comments on behalf of the telephone associations in this docket.

Q. What is the purpose of your reply comments?

A. First, I want to reiterate that this proceeding should be delayed until the major regulatory proceedings are completed, since the outcomes may have a significant effect on ILECs' risk and cost of capital. Second, I am responding to the second round of comments filed by General Services Administration ("GSA"), AT&T, and MCI WorldCom ("MCI").

Q. Are AT&T and MCI correct in asserting that all available market evidence points to cost of capital for ILECs below the currently prescribed 11.25 percent level?

A. No. AT&T takes the extreme—and incorrect—position that "*[e]very* accepted method of estimating the incumbent LECs' capital costs and *all* available market data show that the 11.25 percent rate of return exceeds the ILECs' current cost of capital."[1] Likewise, MCI asserts that "it is clear to any observer that capital costs have declined sharply" since the Commission prescribed the current rate of return.[2] To the contrary, not only my comments, but also the comments of Dr. Billingsley, Dr. Vander Weide, and Mr. Cummings, present analyses confirming that the cost of capital for ILECs has not declined.

Unlike interest rates and stock prices, the cost of capital is not directly observable. The drop in Treasury interest rates and the rise in stock prices are only two changes out of the many

[1]AT&T Responsive Submission at ii.

[2]MCI Reply Comments at 2.

that have occurred since the ILEC rate was last prescribed in 1990. Focusing on these two observable parameters would leave us unable to make valid inferences about a complex issue like the ILECs' cost of capital. In particular, the Commission cannot properly ignore the significant changes in the ILECs' market-value capital structure and relative risk since 1990.

Q. Is ignoring the market-based capital structure consistent with basing the prescribed rate of return for ILECs on available market data?

A. No. Even AT&T concedes that the ILECs' position regarding market based capital structures is "true as a matter of abstract financial economic theory."[3] But acceptance of market-based capital structures is by no means limited to the halls of academe. Practitioners dealing with concrete problems of business finance look to market values in assessing capital structure. For example, in a recent handbook for appraisers, Dr. Shannon P. Pratt, a leading authority in business valuation, emphasizes that market-value weights must be used when estimating the weighted average cost of capital:

> [W]e have to compute or estimate the weight . . . for each component of the capital structure. The critical point is that *the relative weightings of debt and equity or other capital components are based on the market values of each component, not on the book values.*[4]

The Commission's objective in prescribing the rate of return is to ensure that ILECs can raise capital. But equity can only be obtained at current market values. If the prescribed rate of return is based on weights different from current market values, it will not measure the actual capital costs required to raise capital in current markets.

Q. Does the fact that various financial advisory services report book-value capital data support the Commission's ignoring market-value capital structure?

A. No. As MCI noted, Value Line and S&P report book-value capital structure data.[5] But they also include data on current common stock prices and total market capitalization. When a company issues equity or debt, the relevant price is the current market price. And when investors

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[3]AT&T Responsive Submission at 18.

[4]Shannon P. Pratt, *Cost of Capital: Estimation and Applications* 45 (1998) (emphasis in original).

[5]MCI Reply Comments at 14-15.

measure the equity invested in a company, they look at market capitalization, not book value.

On a related point, MCI suggests that since equity is far more expensive than debt, ILECs should prefer to finance capital expansion with debt.[6] MCI thus challenges the use of capital structures with only one dollar out of five coming from debt. Of course, if investors were unconcerned about risk, ILECs—and every other business—would rely exclusively on debt. In the real world, however, companies must balance debt with equity because investors demand higher returns on both debt and equity as leverage increases. Capital structure does not reflect simply the "revealed preference of RBOC management" as asserted by MCI,[7] but rather is dictated by the capital markets.

Q. Do you agree with AT&T and MCI that a cost of capital based on current market conditions would enable ILECs to attract capital?

A. Yes. AT&T correctly observes that "a market-determined cost of capital, by definition, provides a competitive return that will attract available capital."[8] Similarly, by definition, unless a cost of capital is based on a market-value capital structure, it will fail to provide a competitive, market-determined return, sufficient to attract capital. MCI suggests that the ILECs provide no evidence that they would not have access to capital markets "if their rate of return was adjusted to reflect current conditions in the capital markets."[9] MCI misses the point. Included in current market conditions is the market-value capital structure resulting from investors' evaluation of securities in the market place. Because MCI's proposal would lower returns below current market capital costs, it necessarily follows that ILECs would no longer be able to attract capital in the marketplace.

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[6]MCI Reply Comments at 14. Although MCI's capital structure is not relevant to this proceeding, I would note that with a market capitalization of nearly $136 billion in equity, MCI's total debt is about $20 billion, or less than 13 percent of total capital. *Value Line Investment Survey* 752 (Jan. 8, 1999).

[7]*Id.*

[8]AT&T Responsive Submission at 24.

[9]MCI Reply Comments at 12.

Q. Is GSA correct that the ILECs must provide evidence they are having difficulty raising capital in order to justify not lowering the prescribed rate of return?[10]

A. No. The Commission's objective is to ensure that ILECs can attract capital on reasonable terms regardless of market conditions. Customers depend on the ILECs, as the carriers of last resort, to be able to maintain and improve the vital telecommunications infrastructure. Customers of small, rural ILECs are no less deserving than those served by larger, urban companies. Indeed, the Commission has told Congress it intends to promote the deployment of advanced services for all Americans, including customers in rural areas.[11] Similarly, the ability to raise capital must not be foreclosed when credit crunches or other adverse capital market conditions develop.

In my earlier comments, I documented the concerns of the investment community regarding a reduction in the ILECs' prescribed rates of return and the chilling signal it would send the capital markets. AT&T noted that some observers have concluded that the danger of an imminent credit crunch may be waning.[12] It would be shortsighted, however, to wager customers' welfare on the hope that no credit crunches or other capital market disturbances will occur again.

By the same token, removing the safety net provided by the low-end adjustment mechanism would expose the customers of financially weakened ILECs to service deterioration. Incredibly, AT&T repeated an earlier MCI assertion that "low incumbent LEC earnings in one year are quickly offset by high earnings in subsequent years."[13] In my experience, however, the difficulties that trigger financial problems for an ILEC often persist for more than one year. In such circumstances, the safety net is particularly important to preserving the quality of service available to customers. The Commission cannot proceed with an unfounded optimism that in every crisis, a solution will mysteriously appear. Customers would not be well served by an ILEC that may be able to raise capital when times are good, but not in times of financial dis-

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[10]GSA Reply to Direct Cases at 14.

[11]FCC Report to Congress in CC Docket No. 98–146, ¶ 8, and Separate Statement of Chairman William E. Kennard (Jan. 28, 1999).

[12]AT&T Reply Submission at 24-25.

[13]AT&T Responsive Submission at iv.

tress.

Q. Does the availability of internally generated funds indicate that a reduction of the prescribed rate of return will not impair ILECs access to capital?

A. No. According to MCI, I ignored internally generated cash.[14] In the first place, internally generated funds quickly dry up when a firm undergoes financial distress. Also, even in good times, the investment required to keep a system abreast of growth and technology can exceed an ILEC's internal cash flow. The most important point, however, is that internally generated funds are the private property of an ILEC's investors, and they have an opportunity cost. If the return is not commensurate with the market-determined cost of equity, the investors' property is being appropriated. MCI's notion that ILECs can retain earnings and invest them at below-market rates is inconsistent with this country's system of allocating resources through free markets.

AT&T seems confident that the new universal service subsidy system "should address any legitimate concerns."[15] Rural and disadvantaged customers—and the ILECs that serve them— hope that the efforts of this Commission, state regulatory bodies, and all other parties result in a workable and fair system. Investors, however, tend to be skeptical of good intentions alone. As discussed in my earlier comments, the regulatory uncertainty over the universal service subsidy system is one of the major drivers of the risk that investors perceive for ILECs.

Q. Do you claim, as suggested by AT&T,[16] that increased risk premiums by themselves have kept the cost of capital of ILECs from falling as interest rates declined?

A. No. The inverse relationship between risk premium and interest rates is not a "novel claim," but has been discussed in the financial literature for many decades.[17] In addition, regulators have

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[14]MCI Reply Comments at 12.

[15]*Id.*

[16]AT&T Responsive Submission at 24.

[17]*See, e.g.,* Gordon, M.J., & Halpern, P.J., *Bond Share Yield Spreads Under Uncertain Inflation*, 66 AMER. ECON. REV. 559 (1976); Malkiel, B.G., *The Capital Formation Problem in the United States*, 34 J. FIN. 291 (1979); Merton, R.C., *On Estimating the Expected Return on the Market*, 8 J. FIN. ECON. 323 (1980). See my earlier comments and those of Dr. Billingsley for citations to some of the many studies that have quantified the inverse relationship.

used this inverse relationship in setting rates.[18] My argument begins from the general economic principle that the risk premium for stocks over bonds tends to increase as interest rates fall. Hence, in a period of falling interest rates, we expect the cost of equity to decline less than the interest rates. The larger risk premium has thus simply reduced the size of increase in the relative risk of ILECs necessary to offset the decline in interest rates. More important, contrary to AT&T's misstatement of my earlier comments, the cost of capital for ILECs has been supported not only by the companies' increased risk premiums, but also by the shift in their market-value capital structures toward equity.

Risk premiums are inherently unobservable because they measure the difference between observable interest rates and the unobservable cost of equity. Because empirical studies have arrived at different estimates in the change in risk premium associated with a given change in interest rates, I took care in my comments not to endorse a specific estimate of the inverse relationship. Rather, I made the general observation that "[t]he evidence reveals that during a period of declining interest rates, the cost of equity declines by less than half the corresponding decline in bond yields."[19] This range is consistent with the academic evidence and the regulatory commission orders cited earlier.

AT&T referred also to a possible misspecification problem in one of the studies that I cited. Interestingly, the misspecification discussed in the article would likely have caused any decline in equity costs to be overstated. In other words, the study could well have supported the argument that the required return on equity tends to fall much less than 50 percent of the decline in bond yields, justifying an even stronger statement than I made in my direct comments.

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[18]For example, the Virginia State Corporation Commission incorporated the inverse relationship between interest rates and the return on equity in an alternative regulation plan for LECs. Case No. PUC920029 (Dec. 17, 1993). *See also, Interstate Power Co.*, Iowa Utilities Board, Docket No. RPU–93–6 (June 3, 1994); California Public Utilities Commission, Decision No. 95–11–024.

[19]Avera Affidavit at 21.

Q. Is AT&T correct in its claim that the relative risk of ILECs has not increased?

A. No. AT&T cites the growth in access lines currently enjoyed by some ILECs as proof that the access business may actually be less risky. While growth increases the profit potential for ILECs in the short run, it also increases risk as a result of looming competitive threats. After all, serving new customers requires installing new facilities. If those customers later leave, a large part of the investment in the facilities cannot be redeployed to serve other customers. The risk arises because ILECs have no choice but to install the facilities demanded by current growth—with no long-term assurance that the customers will remain for the life of the facilities.

AT&T itself is apparently planning to do its best to court customers away from ILECs, according to the statement of its CEO on the editorial page of the *Wall Street Journal*:

> AT&T is on its way to bypassing the local telephone loop and reaching customers directly over cable-television lines thanks to our merger agreement with TCI and our joint venture with Time-Warner. These agreements will eventually give us access to better than 40% of all American homes.[20]

As discussed in my earlier comments, investors look to the future in assessing risk. The overhang of such a huge assault to bypass ILECs' networks cannot be ignored. Indeed, the quotations from the investment community that I presented in my direct comments demonstrate that investors are concerned about this risk. I was therefore surprised that, in the face of this evidence, MCI would assert that ILECs' business risk has not increased, simply because they are currently enjoying a growth in demand.[21] For ILECs, growth is currently a two-edged sword, increasing both the potential returns and the risk of their business. Hence, growth increases both ILECs' stock prices *and* required returns on equity.

Q. Is AT&T's observation about competition being an "unsystematic" risk imply that it is not reflected in capital costs?

A. No. AT&T suggests that "an investor can diversify the negative effects of competition on an incumbent LEC stock by, *inter alia*, purchasing stock in the incumbent LECs' competitors as

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[20]Armstrong, C.M., "Local Phone Companies Rip Off Customers," *Wall St. J.* (Mar. 1, 1999).

[21]MCI Reply Comments at 10.

well."[22] This theory assumes that ILEC losses would be offset by the competitors' gains. When a competitor lures away customers, however, the ILEC facilities built to serve those customers lose value unless they can be redeployed. Moreover, the competitor must invest in additional, redundant facilities to serve the customers. Since the ILEC's loss is not entirely offset by the competitor's gains, investors cannot avoid risk by simultaneously investing in both the ILEC and the competitor. Nowhere in Mr. Armstrong's earlier-cited letter did AT&T offer to compensate ILECs for the facilities stranded if it succeeds in capturing upwards of 40 percent of residential customers by investing in cable systems.

[22]AT&T Responsive Submission at 27.

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
IN THE MATTER OF:
PRESCRIBING THE AUTHORIZED RATE OF RETURN FOR INTERSTATE SERVICES OF LOCAL EXCHANGE CARRIERS
CC DOCKET NO. 98-166

REBUTTAL COMMENTS OF DR. RANDALL S. BILLINGSLEY, CFA

APRIL 8, 1999

FILED ON BEHALF OF:
THE UNITED STATES TELEPHONE ASSOCIATION, NATIONAL TELEPHONE COOPERATIVE ASSOCIATION, NATIONAL RURAL TELECOM ASSOCIATION, ORGANIZATION FOR THE PROMOTION AND ADVANCEMENT OF SMALL TELECOMMUNICATIONS COMPANIES, INDEPENDENT TELEPHONE AND TELECOMMUNICATIONS ALLIANCE, AND NATIONAL EXCHANGE CARRIER ASSOCIATION

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I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Randall S. Billingsley. My business address is: Department of Finance, Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061-0221.

These rebuttal comments present my independent professional opinions and are not presented by me as a representative of Virginia Polytechnic Institute and State University.

Q. Have you previously submitted comments in this proceeding on behalf of the telephone associations?

A. Yes. I last filed comments before the Federal Communications Commission (Commission or FCC) on March 16, 1999 (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166).

II. PURPOSE OF REBUTTAL COMMENTS AND SUMMARY OF CONCLUSIONS

A. PURPOSE OF REBUTTAL COMMENTS

Q. What is the purpose of your rebuttal comments in this proceeding?

A. The purpose of my rebuttal comments is to show the numerous errors and fatal flaws in the data, calculations, theory, and assumptions used in the affidavit filed by Dr. Bradford Cornell and Mr. John I. Hirshleifer on behalf of AT&T Corporation. These errors result in grossly understated capital cost recommendations for the incumbent local exchange companies (ILECs) not subject to price cap regulation. I also rebut the Reply Comments of MCI WorldCom, Inc. (MCI WorldCom) and the Reply to Direct Cases of the General Services Administration (GSA) filed in this proceeding on March 16, 1999. My rebuttals of the MCI WorldCom and GSA submissions focus on areas not addressed in my previously filed comments concerning their filings up to that time.

B. SUMMARY OF REBUTTAL OF DR. BRADFORD CORNELL AND MR. JOHN I. HIRSHLEIFER'S AFFIDAVIT ON BEHALF OF AT&T

Q. What issues does your rebuttal focus on in Dr. Cornell and Mr. Hirshleifer's affidavit concerning the ILECs' capital costs?

A. My rebuttal explains the errors and inconsistencies in Dr. Cornell and Mr. Hirshleifer's recommended capital structure, discounted cash flow (DCF) and capital asset pricing model (CAPM) analyses of the ILECs' costs of equity capital, their cost of debt estimation, and their misunderstanding of the riskiness of investing in the telecommunications industry today. Dr. Cornell and Mr. Hirshleifer incorrectly rely on book values in determining their recommended capital structure. I explain how their use

of historical costs and adherence to accounting practices do not capture the market's assessment of a firm's capital structure. The use of book values incorrectly substitutes a firm's bookkeeping history for investors' expectations in cost of capital estimation. I then demonstrate how these flaws cause Dr. Cornell and Mr. Hirshleifer to understate the amount of equity in the ILEC's capital structure and thus to seriously underestimate the ILECs' overall cost of capital. My rebuttal also shows the serious flaws in their application of a hybrid DCF model that results in a significant understatement of the cost of equity they recommend. Their errors in using the DCF approach include: 1) use of a highly subjective three-stage model that is not representative of the investor's perspective; 2) use of growth rate forecasts that do not reflect consensus investment community expectations; 3) inappropriate and unsupported reliance on the regional Bell holding companies (RBHCs), GTE, and selected independent telephone companies as comparable in risk to the ILECs; 4) ignoring the need to adjust for flotation costs, and 5) failure to use the appropriate form of the DCF model that recognizes the quarterly payment of dividends.

This rebuttal also shows Dr. Cornell and Mr. Hirshleifer's errors in applying the CAPM to calculate the cost of equity for the ILECs. These mistakes include: 1) the application of their flawed three-stage DCF model to estimate the expected equity market return and risk premium, and 2) reliance on capital market data going all the way back to 1802 that are unrepresentative of current or expected capital market conditions in the U.S.

My rebuttal shows that Dr. Cornell and Mr. Hirshleifer's cost of debt analysis is flawed by their reliance on embedded, book value-based costs and the incorrect use of debt that was not issued to finance telephone network assets. Finally, I show that Dr. Cornell and Mr. Hirshleifer's views on the risks that are relevant to assessing capital costs in the telecommunications industry are confused and inconsistent. In the same vein, I explain that their argument that the ILECs' provision of access services is of relatively low risk is unsupported.

C. SUMMARY OF REBUTTAL OF REPLY COMMENTS OF MCI WORLDCOM

Q. What primary points do you make in your rebuttal of MCI WorldCom's cost of capital recommendations for the regulation of the ILECs?

A. I discuss evidence that contradicts MCI WorldCom's position that the general decline in debt costs in recent years necessarily implies that the ILECs' cost of equity has declined. Similarly, I also explain that the presented historical or earned stock market returns on the RBHCs and GTE are not inconsistent with increasing business risk and overall capital costs.

D. SUMMARY OF REBUTTAL OF REPLY TO DIRECT CASES OF THE GENERAL SERVICES ADMINISTRATION (GSA)

Q. Would you summarize your assessment of the GSA's Reply to Direct Cases filed in this docket?

A. Yes. I critically evaluate the GSA's stated reasons for rejecting the use of market value capital structures. I conclude that the GSA's recommendation that regulatory capital structures be used is incorrect and ill suited to the increasingly competitive and deregulated environment characterizing the telecommunications industry.

III. REBUTTAL OF DR. CORNELL AND MR. JOHN I. HIRSHLEIFER'S AFFIDAVIT ON BEHALF OF AT&T

A. ERRORS IN RECOMMENDED CAPITAL STRUCTURE

Q. What are the theoretical and practical flaws of Dr. Cornell and Mr. Hirshleifer's reliance on book value capital structures?

A. Dr. Cornell and Mr. Hirshleifer's reliance on book value capital structures does not recognize the reality of an ILEC obtaining capital in today's financial marketplace. They

incorrectly give equal weight to book values and market values in producing their capital structure recommendations for the ILECs. They rely on book value capital structures to determine the low end of their recommended cost of capital ranges, while market value capital structures produce the high end of their range. The use of market values is both theoretically as well and practically appropriate and consistent with establishing a prospective cost of capital for use in a proceeding such as this one. Market values should be used exclusively because they are dynamically determined in the marketplace by investors, while book values are the result of historical accounting practices. One-time accounting events that do not change market values can significantly alter book values. Additionally, the point in time at which a company issued stock in the past can influence book values, while prospective market values are not affected. Current market values are determined by investors' most up-to-date expectations for the future. These expectations are based on a variety of factors, many of which are external to an ILEC. Book values look at a firm largely in dated isolation, while market values consider the firm's expected performance in light of its external competitive environment as well.

Over time, market values vary from book values as investors change stock prices in response to new company announcements as well as to announcements concerning their competitors for investors' dollars. If an event or announcement significantly enhances or detracts from shareholder value, that change is immediately translated into a market value change by investors, while there is likely to be no immediate change in book value. It is obvious that Dr. Cornell and Mr. Hirshleifer's reliance on book values is unrepresentative of the investor's perspective in today's capital markets from which the ILECs must obtain capital. As with all of the errors and inconsistencies in their affidavit, the impact of relying on book values is a downward bias in their cost of capital estimates.

As elaborated on in my previously filed comments, the use of market value-based capital structures in cost of capital analysis is consistent with well-established financial theory and practice (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166, March 16, 1999, pp. 33-34). I believe that the use of market value-based capital structures

is also consistent with the universally accepted Supreme Court precedents concerning what characterizes a reasonable rate of return for a regulated public utility (see Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia, 262, U.S. 679, 692-3, (1923) and Federal Power Commission v. Hope Natural Gas Co. 320, U.S. 591, (1944)).

Q. Do you agree with Dr. Cornell and Mr. Hirshleifer's position that a book value capital structure should be used for the telephone companies because this better represents a time when the companies were more focused on the traditional local exchange business?

A. No. Dr. Cornell and Mr. Hirshleifer's misguided argument is as follows:

> It is reasonable to use the book value of the telephone holding company capital structure as a proxy for the network access company's structure because at the time that the equity proceeds were recorded on their books at what was then market value, the telephone holding companies were much more focused on the traditional monopolistic local exchange business. This is much closer to the business of network access when compared to the various endeavors undertaken by telephone holding companies today (Affidavit, p. 25, paragraph 57).

This position relies on accounting- rather than market-based value estimates and makes incorrect and unsupported implicit assumptions about the book value of equity. Further, their argument is unsupported by empirical evidence and is logically flawed.

Dr. Cornell and Mr. Hirshleifer's fallacious argument alleges that: 1) "... equity proceeds were recorded on their books at what was then market value;" 2) this was a time of greater focus on local exchange, and thus 3) book value capital structures should better represent local exchange-related capital structures. Yet the proceeds of a previous equity issue do not remain "fixed in stone" on a firm's accounting books. The book value of equity changes over time due to many potential accounting adjustments and does not represent a dependable historical or current market assessment of a company's equity securities. One must wonder if Dr. Cornell or Mr. Hirshleifer believe that they could buy

or sell AT&T's stock at book value in today's stock market. Further, relying on a historical value because there is something presumed to be attractive about that prior point in time is a questionable practice. Consistent with the investor's perspective, capital costs are prospective and must therefore be based on the market's current assessment of security values and the implied return requirements.

Dr. Cornell and Mr. Hirshleifer's use of RBHC company book value capital structures also undermines their argument. As noted in my above rebuttal comments and my previously filed comments, the RBHCs are not reasonable proxies for the ILECs. Their argument that the RBHCs' book value capital structure should be used is logically flawed unsupported by empirical evidence.

Q. How relevant is Dr. Cornell and Mr. Hirshleifer's discussion of the cost of capital estimates for a group of electric utility companies as an alleged benchmark for evaluating the ILECs' capital costs?

A. The presented electric utilities cost of capital analysis is an irrelevant benchmark in assessing the ILECs' capital costs. Indeed, it is surprising that Dr. Cornell and Mr. Hirshleifer include the results of such an analysis in their affidavit because they explicitly admit that these are "non-comparable companies" (Affidavit, p. 23, paragraph 53). No systematic analysis is conducted to establish the comparability of the sample of electric utilities with the ILECs. Further, Dr. Cornell and Mr. Hirshleifer indicate that "[w]e did not choose this set of electric utilities companies; rather it was chosen by an expert in an unrelated proceeding" (Affidavit, p. 23, footnote 36). It is apparent that Dr. Cornell and Mr. Hirshleifer understand and acknowledge that the indicated electric utilities are not comparable to the ILECs, were chosen and analyzed by someone else, and were produced for use in an "unrelated proceeding." Thus, this benchmarking effort should be dismissed as irrelevant to the assessment of the ILECs' capital costs.

B. ERRORS IN DCF COST OF EQUITY ANALYSIS

1. FAILURE TO REFLECT INVESTORS' PERSPECTIVE

Q. Is Dr. Cornell and Mr. Hirshleifer's use of a three-stage DCF model representative of investors' valuation perspective and is it a common approach in regulatory proceedings?

A. No. Dr. Cornell and Mr. Hirshleifer's three-stage model is complex, subjective, and uses growth rate forecasts that reflect their own opinions rather than those of the investment community. Due to these limitations, three-stage approaches are not commonly used in regulatory proceedings. Dr. Cornell and Mr. Hirshleifer's results do not provide insight into the current prospective equity capital costs of the ILECs .

Dr. Cornell and Mr. Hirshleifer's three-stage approach makes use of firm-specific investment community consensus growth rate forecasts, as measured by Institutional Brokers Estimation Service (IBES), for only the first stage (five years) of their analysis. Further, they rely on Value Line's forecast of 1998 dividends for the first year of the five-year period. After this five-year period, they assume a second stage of 15 years during which the growth rate falls from the initial IBES growth rate to a projected growth rate for the overall U.S. economy by the end of the 20th year. After that time, Dr. Cornell and Mr. Hirshleifer assume that the growth rate remains at that projected rate for the economy indefinitely (Affidavit, pp. 10 - 13, paragraphs 23 - 26).

Their analysis misses the mark in the current proceeding. The goal here is to estimate the ILECs' costs of meeting their equity investors' return requirements in market terms. Thus, the analysis should reflect the investment analysis process and expectations of investors. Dr. Cornell and Mr. Hirshleifer's analysis of the costs of equity for the ILECs departs from investors' perspective by substituting their expectations for those of investors in two out of the three stages in their analysis.

Q. Do Dr. Cornell and Mr. Hirshleifer use the most up-to-date capital market data in an objective manner?

A. No. Dr. Cornell and Mr. Hirshleifer rely on dated information and use those data in a

highly subjective manner. As noted above, they use the " ... Value Line forecast 1998 dividend for the first forecast year" of the first stage in their analysis (Affidavit, p. 11, paragraph 24). The use of a forecast for 1998 dividends in March of 1999 inappropriately ties their analysis to a forecast after the fact. Similarly, they incorrectly rely on the RBHCs' stock prices as of December 31, 1997 and IBES growth rate forecasts produced in January of 1998 (Affidavit, Attachment 3). Thus, even if their methodology was appropriate, their DCF analysis could only produce cost of equity estimates that were relevant about 15 months ago. The use of such dated information consequently produces historical cost of equity estimates that are irrelevant to the decision-making needs of the Commission in this proceeding.

Dr. Cornell and Mr. Hirshleifer produce company-specific cost of equity estimates using a highly subjective approach. They use a "... weighted average which assigns a ¾ weight to the value-weighted average excluding the target company and a ¼ weight to the target company ..." (Affidavit, page 13, paragraph 28). No explanation is provided for why the specific ¼, ¾ weights are appropriate. Readers of their affidavit must wonder why it would not be equally acceptable to use any other weighting scheme. Further, their cost of equity estimates are market value-weighted. Thus, it is inconsistent for Dr. Cornell and Mr. Hirshleifer to use market value-weighting in this context but to rely on book value-weighted capital structures in estimating the ILECs' overall cost of capital. The only appropriate way to describe capital structure and estimate the cost of capital is using market value-weighted data that reflect investors' most up-to-date assessments of value.

Q. How relevant is Dr. Cornell and Mr. Hirshleifer's criticism of the constant growth DCF model on the basis that telecommunications firms' projected growth rates are not sustainable "into perpetuity?"

A. While Dr. Cornell and Mr. Hirshleifer's criticism of the constant growth version of the DCF model is theoretically correct, it is practically irrelevant and misguided in the current context. They observe that:

The telephone companies in our group of comparables are composed of a variety of

businesses, some of which - such as cellular - are expected to have earnings grow of 30 percent or more in the short run. Such high growth rates are not sustainable into perpetuity, so that the simple constant growth model cannot be applied ... (Affidavit, p. 8, paragraph 21).

Dr. Cornell and Mr. Hirshleifer's unsupported apparent concern is that telephone companies are "composed of a variety of businesses" that cannot be captured by a single growth rate. However, investors routinely price securities for firms composed of numerous business units by evaluating the net contribution of each unit to the overall growth of the firm.

Dr. Cornell and Mr. Hirshleifer's rejection of the constant growth DCF model because they assume that telephone company growth rates are "not sustainable into perpetuity" does not adequately relate valuation theory to practice in light of realistic investor concerns. While the constant growth DCF model does theoretically assume a constant growth rate for perpetuity, there is no evidence that investors practically consider perpetuity in their valuation decisions. Simply put, the present value of the distant projected cash flows from an investment are too small to have a significant practical effect on investors' decisions.

Dr. Cornell and Mr. Hirshleifer's theoretical criticism of the constant growth DCF model is irrelevant. They incorrectly claim to apply a "standard discounted cash flow" methodology (Affidavit, p. 2, paragraph 4) but their three-stage model is certainly not "standard." Their decision to replace it with a three-stage DCF model only introduces a more subjective, complicated approach that substitutes their growth forecasts for those of the investors who are actually putting money into stocks.

Q. What support do Dr. Cornell and Mr. Hirshleifer offer for limiting the long-term growth of their sample of firms to the projected growth rate of the U.S. economy?

A. They offer only their opinion that "... different rates cannot be sustained into perpetuity"

(Affidavit, p. 11, paragraph 23). Dr. Cornell and Mr. Hirshleifer's observation has no practical relevance in assessing the usefulness of the constant growth DCF model in the current proceeding. Investors could easily believe that telecommunications firms' consensus growth rate projections are sustainable beyond the next five years to the foreseeable future but less than forever. As noted above, the present value of such distant cash flows is too small to have a significant effect on the cost of equity. Further, it is important to note that the growth rates to which Dr. Cornell and Mr. Hirshleifer refer relate to earnings per share (EPS). Corporate spin-offs and share repurchases can affect EPS in a way that supports a firm's growth at a rate in excess of the U.S. economy indefinitely. Dr. Cornell and Mr. Hirshleifer's observations on the supposed relationship between company growth rates and the overall rate of growth in the economy ignore this possibility for EPS-based growth rates.

Q. Do Dr. Cornell and Mr. Hirshleifer unrealistically assume that all of the firms in their DCF sample and all of the firms in the S&P 500 index will be growing at the same rate in about twenty years?

A. Yes. As noted above, Dr. Cornell and Mr. Hirshleifer assume that the growth rates of all of the firms in their DCF sample will "... converge to the growth rate of the U.S. economy as a whole ... (Affidavit, p. 11, paragraph 23). Further, in estimating the market risk premium they state that "... the three-stage DCF model is applied in the same fashion as it was applied to the sample of telephone holding companies" (Affidavit, p. 19, paragraph 43). Thus, Dr. Cornell and Mr. Hirshleifer unrealistically assume that all of the RBHCs, GTE, selected independent telephone companies, and all of the firms in the S&P 500 index will be growing at the same rate, which is assumed to be 5.50% in their analysis (Affidavit, p. 12, paragraph 25 and Attachment 3). It strains common sense to believe that all of the indicated telecommunications firms and all 500 firms in the S&P 500 index actually will or would be expected to grow at the ***same rate*** at any time. There is no evidence that this has ever happened. Further, Dr. Cornell and Mr. Hirshleifer would have us believe that all of the firms currently experiencing low growth (e.g., electric utilities) will observe their growth rates increasing to 5.50% over the next 20

years. Their assumptions are incredible.

Q. In attempting to justify their use of a three-stage rather than a constant growth version of the DCF model, Dr. Cornell and Mr. Hirshleifer cite a book by Professor Aswath Damodaran as a key reference (see page 10 and footnote 12 of their affidavit). Is Dr. Cornell and Mr. Hirshleifer's decision to use a three-stage version of the model consistent with Damodaran's stated conditions under which the model is appropriate?

A. No, Dr. Cornell and Mr. Hirshleifer's use of the three-stage model is inconsistent with the circumstances described for the best use of the model. Damodaran indicates that "... this may be the more appropriate model to use for a firm whose earnings are growing at a very high rates ..." where "... growth rates over would 25% qualify as very high ... (**Damodaran On Valuation**, John Wiley & Sons, 1994, p. 119).

Attachment 3 shows that none of the companies to which Dr. Cornell and Mr. Hirshleifer apply their three-stage DCF model have growth rates "over 25%." Indeed, all of the projected growth rates are below 10%. Thus, their decision to use this form of the model is inconsistent with the conditions for its appropriate use described in the Damodaran reference cited in their affidavit.

Q. Does this reference cited by Dr. Cornell and Mr. Hirshleifer discuss any limitations in using the three-stage version of the DCF model?

A. Yes. In comparing the three-stage model to the other versions of the DCF model, Damodaran observes that:

> ... [I]t requires a much larger number of inputs: year-specific payout ratios, growth rates, and betas. For firms in which there is substantial noise in the estimation process, the errors in these inputs can overwhelm any benefits that accrue from the additional flexibility in the model (**Damodaran on Valuation**, John Wiley & Sons, 1994, pp. 118 -119).

Damodaran's concern over the effect of "substantial noise" is particularly relevant to Dr. Cornell and Mr. Hirshleifer's analysis. They apply a three-stage DCF model to the RBHCs. The dramatic effects of deregulation, increasing competition, the implementation of the Telecommunications Act of 1996, and industry consolidation certainly introduce much noise into the estimation of such firms' equity costs. Thus, Dr. Cornell and Mr. Hirshleifer's DCF model is particularly inappropriate for estimating the costs of equity of the ILECs.

Q. Dr. Cornell and Mr. Hirshleifer allege that their version of the three-stage DCF model is different from that presented by Professor Damodaran but do not explain the nature of the difference or why it is supposedly significant. Would you explain Dr. Cornell and Mr. Hirshleifer's statement and how it relates to the sections of Professor Damodaran's book concerning the three-stage model?

A. Yes. As noted above, Dr. Cornell and Mr. Hirshleifer describe their three-stage model as follows:

> ... [T]he first stage lasts five years ... The second stage is assumed to last 15 years. During this stage the growth rate gradually tapers from the initial level of the first five years to converge to the growth rate of the U.S. economy as a whole in year 19. From the twentieth year onward the growth rate is set equal to the growth rate for the economy because different rates cannot be sustained into perpetuity (Affidavit, pp. 10 - 11, paragraph 23).

Professor Damodaran's description of the three-stage model shows that he, Dr. Cornell, and Mr. Hirshleifer use the same basic approach:

> The three-stage dividend-discount model combines the features of the two-stage model and the H model. It allows for an initial period of high growth, a transitional period in which growth declines, and a final stable-growth phase (**Damodaran on Valuation**, John Wiley & Sons, 1994, pp. 117).

Q. Does there appear to be any significant difference between the three-stage DCF model used by Dr. Cornell and Mr. Hirshleifer and the three-stage model discussed

by Professor Damodaran?

A. No. Dr. Cornell and Mr. Hirshleifer apparently do not realize that the three-stage model discussed by Professor Damodaran closely fits their described model. It appears that Dr. Cornell and Mr. Hirshleifer do not understand that their model is essentially an extension of the H model to which they refer. Thus, Dr. Cornell and Mr. Hirshleifer's statement that their model is "not comparable" to Professor Damodaran's three-stage model is suspect and reflects a fundamental misunderstanding of the methodology that they use to estimate the costs of equity for the ILECs. This draws into question the overall reliability of their cost of capital analysis of the ILECs.

2. INCORRECT RELIANCE ON THE RBHCS, GTE, AND SELECTED INDEPENDENT TELEPHONE COMPANIES AS COMPARABLE IN RISK TO THE ILECS

Q. What justification do Dr. Cornell and Mr. Hirshleifer give for applying the DCF and the CAPM approaches to the RBHCs, GTE, and selected independent companies as firms comparable in risk to the ILECs?

A. Dr. Cornell and Mr. Hirshleifer only indicate that:

> We support the Commission's tentative conclusion in its Notice that the five regional Bell holding companies ... are appropriate publicly-traded comparable companies. We have also performed cost of capital calculations for two alternative sets of comparable companies. The first alternative set consists of the five RBHCs and GTE. The second alternative set consists of the five RBHCs, GTE, ALLTEL, Century Telephone, Cincinnati Bell, ... and SNET (Affidavit, pp. 3 - 4, paragraph 8).

No empirical evidence is provided to justify the use of these supposedly comparable firms. They only observe in passing that the "[l]arge telephone holding companies are the closest which are available for this purpose" (Affidavit, p. 3, paragraph 7). Thus, Dr. Cornell and Mr. Hirshleifer merely ***assume*** that the ILECs are comparable in risk to the RBHCs, GTE, and selected independent telephone companies. They do not demonstrate comparability. Dr. Cornell and Mr. Hirshleifer conduct no systematic, empirical analysis

using objective screening criteria to identify firms comparable in risk to the ILECs.

In contrast to Dr. Cornell and Mr. Hirshleifer, in my previously filed comments I identify comparable firms by measuring risk and statistically determining risk comparability (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166, March 16, 1999, Billingsley Exhibit No. RSB-3 and Billingsley Exhibit No. RSB-4). My analysis shows that the RBHCs, GTE, and the independent telephone companies are not comparable in risk to the ILECs.

3. FAILURE TO ADJUST FOR FLOTATION COSTS

Q. Do Dr. Cornell and Mr. Hirshleifer's ignore the impact of flotation costs in estimating the costs of equity capital for the ILECs?

A. Yes, its appears that they ignore the need to estimate equity costs in light of flotation costs. They do not indicate in their affidavit whether any such adjustment is made. This unexplained and unsupported apparent decision biases their cost of equity estimate for the ILECs downward.

4. FAILURE TO ADJUST FOR QUARTERLY DIVIDEND PAYMENTS

Q. Is Dr. Cornell and Mr. Hirshleifer's use of the annual form of the DCF model consistent with the investor's perspective on valuing equity securities?

A. No. Dr. Cornell and Mr. Hirshleifer use the annual form of the DCF model even though all of the members of their sample of supposedly comparable firms pay dividends on a quarterly basis. The annual form of the DCF model does not accurately portray the investor's perspective, and consequently, significantly underestimates the cost of equity capital of the ILECs.

When Dr. Cornell and Mr. Hirshleifer argue that it is unnecessary in cost of capital analysis to consider that dividends are received by investors quarterly (Affidavit, p. 13, footnote 18), they essentially argue that investors are indifferent to whether dividends are paid annually or quarterly. Yet the common sense of the investor's perspective convincingly demonstrates that if quarterly compounding is not considered in cost of capital analysis, the implied rate of return is underestimated.

Q. Would you provide an everyday analogy that concretely shows how Dr. Cornell and Mr. Hirshleifer's apparent failure to adjust their cost of equity estimate in light of the quarterly payment of dividends is inappropriate?

A. Yes. Consider whether Dr. Cornell and Mr. Hirshleifer would likely prefer to be paid by a consulting client for their cost of capital analyses just once a year or at the completion of each case throughout the year. While it would be inappropriate for me to speculate on their personal preferences, it is reasonable to believe that Dr. Cornell and Mr. Hirshleifer might price the services that they provide to a client differently if they were paid only at the end of each year. This is because being paid only at the end of the year would adversely affect their ability to invest or otherwise use their earnings. By analogy, investors derive the market prices of stocks in light of their ability to reinvest dividends quarterly rather than just annually. Investors' implied return requirements consequently reflect the impact of quarterly rather than annual dividend payments in a manner that is analogous to how Dr. Cornell and Mr. Hirshleifer might prefer to be paid more frequently than annually for the services that they provide to their clients like AT&T.

C. ERRORS IN CAPM COST OF EQUITY ANALYSIS

Q. Are Dr. Cornell and Mr. Hirshleifer's estimates of the expected return on the equity market, as measured by the S&P 500 index, and the associated equity market risk premium using their three-stage DCF model economically meaningful?

A. No. They are not economically meaningful. Dr. Cornell and Mr. Hirshleifer use their flawed three-stage DCF model to estimate an expected return on the overall equity

market, as measured using selected members of the S&P 500 index, of only 9.81% (see Affidavit, p. 19, paragraph 43). This error is carried to their estimate of the equity market risk premium. These estimates are unrealistically low and thus cause them to seriously underestimate the ILECs' cost of equity using the CAPM approach. Examining historical equity market returns and investors' recent equity market expectations reveal the unreasonableness of their analysis.

Consider Dr. Cornell and Mr. Hirshleifer's 9.81% estimated expected return on the equity market in light of the historical statistics presented in Attachment 7 of their affidavit. The only period in which overall earned stock market returns fell short of their current estimate was the overall interval from 1802 – 1997. The more current sub-periods of 1926 – 1997, 1951 – 1997, and 1971 – 1997 all had returns significantly in excess of their current estimate. Thus, by historical standards their current estimate looks amazingly low unless data from 1802 to 1925 are considered, which hardly seems representative of current or expected stock market conditions. Indeed, the nature, size, and organizational structure of the capital markets between 1802 and 1925 simply reflect a world different from today.

It is also useful much more useful to consider the more recent expected market return evidence provided in Billingsley Exhibit No. RSB-8 of my previously filed comments before the Commission (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166, March 16, 1999). Relying on analysts' forecasts, the average expected return on the Standard & Poor's index from October of 1987 to January of 1999 is 15.34%. Further, expected market returns have been consistently in excess of 16% since August of 1998 - the most recent expected return for which there is complete data (January 1999) being 16.99%. Thus, Dr. Cornell and Mr. Hirshleifer's estimate of the expected return on the S&P 500 of only 9.81% is unrealistically low by both historical and much more accurate current market data standards.

D. ERRORS IN COST OF DEBT ESTIMATION

Q. What mistakes do Dr. Cornell and Mr. Hirshleifer make in estimating the ILECs' cost of debt?

A. Dr. Cornell and Mr. Hirshleifer consider debt costs from two perspectives. First, they present dated bond yield data from December of 1997 for some of the outstanding debt securities issued by the RBHCs (Affidavit, Attachment 2). Second, at AT&T's request and against their own stated judgement, they consider embedded or historical debt costs (Affidavit, p. 6, paragraph 14). Even though a lot of detail on the market debt yields of selected RBHC bonds in December of 1997 is presented in Attachment 2, there is no indication that Dr. Cornell and Mr. Hirshleifer ever use these data in any of their cost of capital calculations for the ILECs. Indeed, they describe their use of the debt costs in estimating the ILECs' overall cost of capital as follows:

> We calculate a lower bound using the embedded cost of debt, our DCF estimate of the cost of equity, and a book-weighted capital structure. The upper bound is calculated using the embedded cost of debt, our CAPM estimate of the cost of equity, and a market-weighted capital structure (Affidavit, p. 6, paragraph 14).

Surprisingly, only an embedded debt cost estimate is used despite the amount of data presented and the discussion devoted to the virtues of market-based debt costs. Further, Attachment 2 does not list all of the RBHCs' outstanding debt issues or any of the ILECs' outstanding issues. Indeed, none of the outstanding debt issues of non-price cap regulated ILECs are considered in their analysis.

Consider the conceptual errors revealed by Dr. Cornell and Mr. Hirshleifer's use of 1997 RBHC bond yield data in an aborted effort to measure the cost of debt that is relevant to determining the prospective cost of the ILECs providing access services. The network assets that provide such services for the ILECs are financed using ILEC debt. However, Dr. Cornell and Mr. Hirshleifer consider the yields on debt issues that were not issued to finance these network assets.

Q. Would you elaborate on which debt issues Dr. Cornell and Mr. Hirshleifer

incorrectly include in their analysis that are irrelevant to assessing the ILECs' costs of financing network assets?

A. Yes. Attachment 2 incorrectly includes debt issued by Ameritech Capital Funding, debt issued by BellSouth Capital Funding, and debt issued by NYNEX Capital Funding - none of which were issued to finance the respective companies' network assets. These debt issues financed the companies' various unregulated ventures, not regulated assets. It is consequently inappropriate for Dr. Cornell and Mr. Hirshleifer to include them in their abandoned analysis of the ILECs' cost of debt.

E. MISUNDERSTANDING OF THE RISKINESS OF INVESTING IN THE TELECOMMUNICATIONS INDUSTRY

Q. Do you agree with Dr. Cornell and Mr. Hirshleifer's observations about the supposedly low relative risks of providing local telephone access services?

A. No. Dr. Cornell and Mr. Hirshleifer only offer their unsupported opinion that "... these risks are substantially less than the risks faced by telephone holding companies' other businesses" (Affidavit, p. 4, paragraph 9). However, they also acknowledge that "... there remains some risk that access customers will bypass the incumbent LEC's network as other alternatives become available" (Affidavit, p. 4, paragraph 9). Dr. Cornell and Mr. Hirshleifer consequently recognize the significant risk of customers bypassing the networks of the ILECs but only offer their unsubstantiated opinion that this is a low risk endeavor. Once again Dr. Cornell and Mr. Hirshleifer substitute their opinion for that of investors.

Q. Why is devoting telephone network assets to the provision of local access services particularly risky?

A. In order for the ILECs to earn reasonable returns on their network assets, they must obtain revenues that cover their costs and appropriate risk-adjusted profits. However, the ILECs are partially dependent on regulators rather than solely on the market to obtain such returns. Dr. Cornell and Mr. Hirshleifer obviously recognize that regulators'

decisions may well not be appealing to shareholders' when they note:

> There is the risk of regulation itself. The rate of return a network is allowed to earn depends on the outcome of proceedings such as this and remains somewhat uncertain (Affidavit, p. 4, paragraph 9).

Because such uncertainty implies risk to investors, Dr. Cornell and Mr. Hirshleifer acknowledge that there is substantial risk in providing local access services. This risk implies higher required rates of return and capital costs. However, Dr. Cornell and Mr. Hirshleifer's comments on the supposedly low relative risk of providing local access are inconsistent with their recognition of high regulatory risk and the significant risk of customer bypass of the local service networks of the ILECs.

Q. How does technological change affect the risk of investing in telephone network assets?

A. Network facilities reflect a given technology that often becomes obsolete quickly. The ILECs must consistently invest to keep their network elements up to date. Thus, such technological obsolescence imposes costs and therefore risks. This puts upward pressure on the ILECs' capital costs.

Q. Do you agree with Dr. Cornell and Mr. Hirshleifer's views on the risks that are reflected in capital costs?

A. No. Dr. Cornell and Mr. Hirshleifer's views are presented inconsistently in their affidavit. For example, they emphasize that "[c]ompetition ... is a diversifiable risk which does not increase the risk premium according to capital market theory" (Affidavit, p. 15, footnote 19). Yet, as noted above, in discussing what they presumably consider to be the relevant risks associated with the business of providing local access services they note that "... there remains some risk that access customers will bypass the incumbent LEC's network as other alternatives become available" (Affidavit, p. 4, paragraph 9). On the one hand Dr. Cornell and Mr. Hirshleifer argue that the risk of losing customers to competition should not affect capital costs and, on the other hand, they inconsistently assert that the risk of bypass, which is just one way of losing customers, is relevant and thus affects

capital costs.

Dr. Cornell and Mr. Hirshleifer's view that greater risk of competition is not compensated in the cost of capital is not practically relevant. The Commission has stated that "... potential competition could increase the risks facing the incumbent LECs, and thus increase their cost of capital" (Notice of Proposed Rulemaking, Third Report and Order, and Notice of Inquiry, FCC 96-488, December 24, 1996, page 101, paragraph 228). Consequently, in contrast to Dr. Cornell and Mr. Hirshleifer, the Commission views the enhanced risk posed by competition as a significant influence on capital costs. Dr. Cornell and Mr. Hirshleifer's expressed views on risk are incomplete and logically inconsistent.

IV. REBUTTAL OF REPLY COMMENTS OF MCI WORLDCOM

Q. Does empirical evidence on capital market returns support MCI WorldCom's assertion that the general decline in interest rates in recent years has been associated with a general decline in equity capital costs in general and for the telephone companies in particular?

A. No. MCI WorldCom incorrectly reasons that:

> The decline in the cost of debt has been accompanied by a concomitant decline in the cost of equity. ... It seems implausible that the cost of equity since 1990 has declined sharply for the S&P 500, but not for telephone companies (Reply Comments of MCI WorldCom, Inc., March 16, 1999, p. 7).

MCI WorldCom only speculates that the general decline in interest rates could not be associated with a decline in the cost of equity for telephone companies. No empirical evidence in support of this supposed relationship is presented. A general increase in the riskiness of the telecommunications industry since 1990 could more than offset the downward pressure exerted by decreasing debt costs on the cost of equity.

Evidence presented in my previously filed comments contradicts MCI WorldCom's

contention that the costs of equity for the firms in the S&P 500 index have fallen since 1990 (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166, March 16, 1999, Billingsley Exhibit RSB-8). My analysis shows that the expected return on the index was 15.18% in January of 1990. While the expected return fluctuates up and down between early 1990 and early 1999, it is currently (January 1999) 16.99%. Thus, in contrast to MCI WorldCom's contention, the capital costs for the S&P 500 have increased rather than decreased since 1990. MCI WorldCom presents no empirical evidence on the relationship between capital costs for the S&P 500 and for telephone companies nor any evidence that telephone company capital costs have not increased due to the higher risks brought by the more deregulated, competitive market.

Q. Is it reasonable for MCI WorldCom to argue that the RBHCs' realized market returns over the past few years could not have occurred if business risk was increasing over the same time period?

A. No. MCI WorldCom's contention is speculative and unreasonable. They present total realized market returns on GTE and the RBHCs' stocks that reflect the "bull" U.S. stock market in recent years. MCI WorldCom then draws the unsupported conclusion that "[t]hese market return results could not possibly have occurred over the past year, three years and five years if the RBOC [regional Bell operating company] cost of capital was increasing due to heightened business risk ..." (Reply Comments of MCI WorldCom, Inc., March 16, 1999, p. 9). However, capital costs are based on expectations, not realized returns. The realized returns presented by MCI WorldCom reflect the general upward trend in the stock market over the given period *and* the increasing risk of investing in the telecommunications industry during that period. MCI WorldCom's broad, unqualified generalization is not backed by empirical evidence or persuasive logic.

V. REBUTTAL OF REPLY TO DIRECT CASES OF THE GENERAL SERVICES ADMINISTRATION

Q. Do you agree with the GSA's position that the appropriate capital structure to be

used in determining the ILECs' cost of capital is based on the regulatory books?

A. No. As discussed above, I believe that a market value-based capital structure should be used in measuring the ILECs' overall cost of capital. The GSA incorrectly argues that a market value capital structure is inappropriate because "[i]t reflects the market value of the company's debt ... and the market value of the company's equity..." and "... it reflects the discounted future value of the earnings and dividends that investors expect they will receive in the future from the entire enterprise..." (Reply To Direct Cases of the General Services Administration, March 16, 1999, p. 13). As discussed in my previously filed comments, capital costs should be measured in terms of market values that reflect investor's perspective rather than regulatory or accounting conventions. Thus, the GSA's argument against the use of market value capital structures is actually an apparently unintended but nonetheless reasonable defense of the practice.

VI. REVIEW OF COST OF CAPITAL RECOMMENDATIONS FOR THE ILECS

Q. Would you review the approaches that you used to determine the ILECs' cost of capital and the findings in your previously filed comments (Comments of Dr. Randall S. Billingsley, CFA, CC Docket No. 98-166, March 16, 1999, pp. 40-41)?

A. Yes. My analysis determined the cost of equity capital from two distinct perspectives: 1) the DCF model, as applied to a group of firms comparable in risk to the ILECs, and 2) the CAPM approach. The risk premium approach is used to corroborate the reasonableness of the estimates produced by the DCF and CAPM approaches. I believe that the cost of equity capital for the ILECs is in the range of 15.00% to 15.23%.

My analysis also concluded that the ILECs currently have a market value-based capital structure of 87.83% equity and 12.17% debt and a cost of debt of 6.35%. Thus, the overall cost of capital for the ILECs ranges from 13.95% to 14.15%. It is consequently my opinion that the ILECs current overall cost of capital is in excess of the 11.25% rate of return authorized by the Commission for the ILECs in 1990. Thus, if the Commission should decide to represcribe the authorized rate of return for the ILECs that are subject to

rate of return regulation for their earnings on interstate access services at this time, the overall cost of capital should be increased above the current level of 11.25%.

Q. Does this conclude your rebuttal comments?

A. Yes, it does.